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Bibliography

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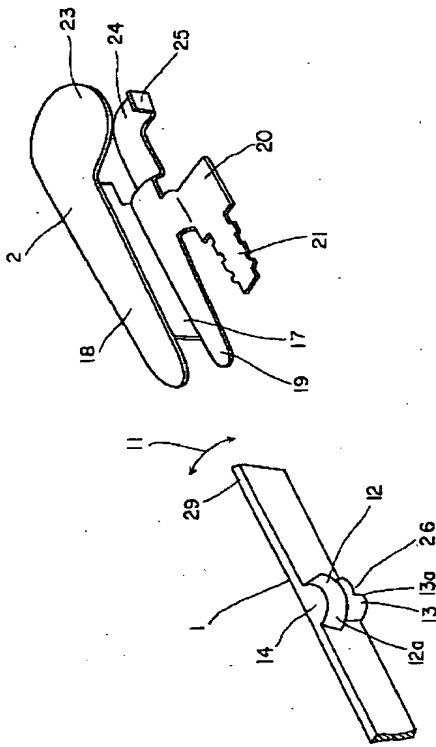
Summary

(57) [Abstract]

[Technical problem] It is insulating housing and the card edge type connector which prepared the piece of a latch of one, and while restricting deformation of the piece of a latch and preventing breakage in use, it can always be made to perform wearing of a card smoothly.

[Means for Solution] the metal backup which equipped the outside of the piece 1 of a latch whose elastic deformation was made possible in the direction left to the side edge of a card, and the approaching direction with a side attachment wall 17 and the cover walls 18 and 19 of the upper and lower sides which follow an abbreviation right angle from a side attachment wall 17 -- a member 2 -- installing It enables it to have stopped the elastic deformation of a direction which are, and the inside of a side attachment wall 17 and the lateral surface of the piece 1 of a latch are made to counter, and separates from the side edge of the card of the piece 1 of a latch by the position. and metal backup -- it starts in the cover wall 19 of the member 2 bottom, a protruding piece 25 is formed, the engagement section 27 with the aforementioned standup protruding piece 25 is formed in the piece 1 bottom of a latch, and it enables it to have stopped the elastic deformation of the direction close to the side edge of the card of the piece 1 of a latch by the position

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CLAIMS

[Utility model registration claim]

[Claim 1] In the card edge type connector 3 equipped with the piece 1 of a latch the side edge 15 of the aforementioned card 8 and whose engaging and releasing is the card edge type connector installed to a parent substrate, and were enabled in order to connect a parent substrate with the card which becomes by the printed circuit board The aforementioned piece 1 of a latch consists of cantilever-like members prolonged in the insulating housing 4 and one from the edge of the insulating housing

4 with which it was equipped with many terminals 5a and 5b. While elastic deformation is made possible in the direction left to the side edge 15 of a card 8, and the approaching direction the metal backup for stopping the elastic deformation of the piece 1 of a latch by the position to this piece 1 of a latch in the both directions of the direction left the account of before, and the approaching direction — the card edge type connector characterized by having formed the member 2 [Claim 2] In the card edge type connector 3 equipped with the piece 1 of a latch the side edge 15 of the aforementioned card 8 and whose engaging and releasing is the card edge type connector installed to a parent substrate, and were enabled in order to connect a parent substrate with the card which becomes by the printed circuit board The aforementioned piece 1 of a latch consists of cantilever-like members prolonged in the insulating housing 4 and one from the edge of the insulating housing 4 with which it was equipped with many terminals 5a and 5b. While elastic deformation is made possible in the direction left to the side edge 15 of a card 8, and the approaching direction The member 2 is installed in the outside of the piece 1 of a latch side by side. the metal backup equipped with a side attachment wall 17 and the cover walls 18 and 19 of the upper and lower sides which follow an abbreviation right angle from a side attachment wall 17 — It enables it to have stopped the elastic deformation of a direction which the inside of the aforementioned side attachment wall 17 and the lateral surface of the piece 1 of a latch are made to counter, and separates from the side edge 15 of the card 8 of the piece 1 of a latch by the position. Start in the cover wall 19 of the member 2 bottom, and a protruding piece 25 is formed. and metal backup — The card edge type connector characterized by the engagement section 27 with the aforementioned standup protruding piece 25 being formed in the piece 1 bottom of a latch, and enabling it to have stopped the elastic deformation of the direction close to the side edge 15 of the card 8 of the piece 1 of a latch by the position.

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DETAILED DESCRIPTION

[Detailed explanation of a design]

[0001]

[Industrial Application]

This design is related with the card edge type connector installed to a parent substrate, in order to connect a parent substrate with the card (child substrate) which becomes by the printed circuit board.

[0002]

[Description of the Prior Art]

Conventionally, this kind of card edge type connector equips with many terminals insulating housing with which the reentrant which accepts the edge of a card was formed, and is constituted, and it is made for the contact section of each terminal arranged in parallel by the aforementioned reentrant and the junction pad formed in the edge of the card received in the reentrant to be engaged due to 1 to 1. And in order to make it the card with which the edge was accepted in the aforementioned reentrant not slip out against mind, the piece of a latch is prepared in the aforementioned insulating housing, and it enables it to engage and release the side edge of a card (for example, references, such as JP,8-22865,U and JP,8-55651,U). This piece of a latch has what was later attached in insulating housing as metal, and the thing formed in one with the same quality of the material as insulating housing.

[0003]

[Problem(s) to be Solved by the Device]

Although the card edge type connector of composition of having formed the piece of a latch in one with the same quality of the material as insulating housing had an advantage, like occupancy area on a parent substrate can be made small, and the number of assemblers of the connector itself can also be lessened compared with what has a metal piece of a latch Since the piece of a latch was the same product made from plastics as insulating housing, too much curve, it was weak, and the portion which equips with a card by deformation by contraction of material became narrow, and there were troubles, like the situation where wearing of a card is barred arises.

[0004]

It aims at offering the card edge type connector of the structure which could always be made to perform wearing of a card smoothly while this design was made in view of this trouble, is the card edge type connector which prepared the piece of a latch of one with the same quality of the material as insulating housing, restricts deformation of the piece of a latch and prevents breakage in use.

[0005]

[Means for Solving the Problem]

In order that this design which attains the aforementioned purpose may connect a parent substrate with the card which becomes by the printed circuit board In a card edge type connector equipped with the piece of a latch the side edge of the

aforementioned card and whose engaging and releasing is the card edge type connector installed to a parent substrate, and were enabled The aforementioned piece of a latch consists of cantilever-like members prolonged in insulating housing and one from the edge of insulating housing with which it was equipped with many terminals. While elastic deformation is made possible in the direction left to the side edge of a card, and the approaching direction To this piece of a latch, the account of before, it is the both directions of the direction to leave and the approaching direction, and is the card edge type connector characterized by having prepared the metal backup member for stopping the elastic deformation of the piece of a latch by the position.

[0006]

Moreover, in order to connect a parent substrate with the card which becomes by the printed circuit board, it sets to a card edge type connector equipped with the piece of a latch the side edge of the aforementioned card and whose engaging and releasing is the card edge type connector installed to a parent substrate, and were enabled. The aforementioned piece of a latch consists of cantilever-like members prolonged in insulating housing and one from the edge of insulating housing with which it was equipped with many terminals. While elastic deformation is made possible in the direction left to the side edge of a card, and the approaching direction The metal backup member equipped with the side attachment wall and the cover wall of the upper and lower sides which follow an abbreviation right angle from a side attachment wall is installed in the outside of the piece of a latch side by side. It enables it to have stopped the elastic deformation of a direction which the inside of the aforementioned side attachment wall and the lateral surface of the piece of a latch are made to counter, and separates from the side edge of the card of the piece of a latch by the position. Start in the cover wall of the member bottom and a protruding piece is prepared. and metal backup -- It is the card edge type connector characterized by the engagement section with the aforementioned standup protruding piece being formed in the piece bottom of a latch, and enabling it to have stopped the elastic deformation of the direction close to the side edge of the card of the piece of a latch by the position.

[0007]

[Function]

According to the card edge type connector of this design, since the elastic deformation is restricted to the range predetermined by the metal backup member, the piece of a latch can prevent breakage by too much curve in use. Moreover, the plastic deformation by contraction of the plastic material which constituted insulating housing etc., and the situation where wearing of a card is barred since it can restrict to the range predetermined by the metal backup member are avoidable.

[0008]

[Example]

Hereafter, it explains with reference to drawing of appending of the example of this

design.

[0009]

drawing 1 — setting — 1 — the piece of a latch, and 2 — metal backup — it is a member a part of card edge type connector 3 of the example which showed the piece 1 of a latch to drawing 2 or drawing 4 — it is — the outside of this piece 1 of a latch — metal backup — the member 2 is installed The card edge type connector 3 consists of two or more terminals 5a and 5b with which the insulating housing 4 which fabricated insulating plastics, and this insulating housing 4 were equipped. The insulating housing 4 is the configuration where supporter 4b was prepared in the ends of this central soma 4a at the abbreviation right angle, and the aforementioned pieces 1 of a latch are each supporter 4b and one, and it is prolonged in the shape of a cantilever along with the longitudinal direction of supporter 4b. A reentrant 6 is formed in the side to which supporter 4b of this soma 4a and the piece 1 of a latch extend along with the longitudinal direction of this soma 4a, and the edge of a card is accepted. Each contact sections 7a and 7b of two or more aforementioned terminals 5a and 5b are allotted to two trains in the respectively fixed pitch so that it can engage with the junction pad of both sides of the edge of the card received in a reentrant 6 (refer to drawing 6). After it makes this card 8 slanting like illustration and it inserts an edge 9 between contact section 7a of a reentrant 6, and 7b, 8 shown with the chain line in drawing 5 is a card, and it is made to rotate in the direction of **** 10, and it sets a card 8 to supporter 4b at parallel, and it is equipped with it.

[0010]

As shown in drawing, the curve of the aforementioned piece 1 of a latch which becomes by the cantilever-like member by elastic deformation is enabled with the thin tabular in the direction of **** 11, i.e., the direction left to the side edge of a card 8, and the approaching direction. The stop section 14 which made the upper part the semicircle frustum type section 12 inside [pars intermedia] the piece 1 of a latch, and made the lower part the semicircle pillar section 13 is formed. In case it is equipped with a card 8 as mentioned above, the side edge of a card 8 counters with the inside of the piece 1 of a latch.

Then, as shown in drawing 7 , the semicircle-like notch 16 made to correspond to the stop section 14 is formed in the side edge 15 of a card 8. In case a card 8 is rotated in the direction of **** 10 to the position which becomes parallel to supporter 4b from the slanting state shown in drawing 5 with the chain line Outside-12a of the shape of a skirt board of the common-law marriage of a notch 16 and the aforementioned semicircle frustum type section 12 counters. After curving according to rotation of a card 8 in the direction in which the piece 1 of a latch separates from the side edge 15 of a card 8 in a cam operation of outside 12a, While the piece 1 of a latch returns to origin with elasticity in the place where the side edge 15 of a card 8 passed the semicircle frustum type section 12 and the semicircle pillar section 13 fits into a notch 16. Base 12b of the semicircle frustum type section 12 stops to the

side edge 15 of a card 8, and it enables it to prevent rotation of a direction opposite to **** 10 of a card 8, and movement by the longitudinal direction of supporter 4b. The height of the semicircle pillar section 13 spreads the thickness of a card 8, abbreviation, etc., and has been carried out.

[0011]

the metal backup installed to the above pieces 1 of a latch — a member 2 is what pierced and fabricated the metal plate in the configuration shown in drawing 8 or drawing 12 in detail, and is equipped with the side attachment wall 17, the up cover wall 18 which follows an abbreviation right angle on the top edge of this side attachment wall 17, and the lower cover wall 19 which follows an abbreviation right angle on the bottom edge of a side attachment wall 17 and the metal backup which formed the nail 21 in the protruding piece 20 which the ulnar margin of the lower cover wall 19 was made to project, carried out the insertion stop of this nail 21 into supporter 4b from the end face of the aforementioned supporter 4b, and was made to meet the piece 1 of a latch — a member 2 is attached in the insulating housing 4, and it can fix now The longitudinal direction of a side attachment wall 17 and the longitudinal direction of a nail 21 are making the angle a little rather than are parallel. the metal backup attached in the insulating housing 4 — while the inside of the side attachment wall 17 and the lateral surface of the aforementioned piece 1 of a latch counter through a crevice 22, as for the member 2, the up cover wall 18 has become along with the piece 1 top of a latch as [meet / the piece 1 bottom of a latch / the lower cover wall 19] Consequently, the elastic deformation of a direction which separates from the direction 15 of an outside of the piece 1 of a latch, i.e., the side edge of a card 8, stops in the place where the lateral surface of the piece 1 of a latch contacted the inside of a side attachment wall 17. It is wearing the upper surface of the semicircle frustum type section 12, the nose-of-cam unilateral of the up cover wall 18 being used as the splenium 23 made to correspond to the stop section 14 of the piece 1 of a latch. On the other hand, the nose of cam of the lower cover wall 19 is used as base 13a of the semicircle pillar section 13 of the stop section 14, and the L character-like portion 24 which counters, it starts at the nose of cam, and the protruding piece 25 is formed.

[0012]

The aforementioned standup protruding piece 25 is for restricting the elastic deformation of the direction of the inside of the piece 1 of a latch, i.e., the direction close to the side edge 15 of a card 8, is made equivalent to this standup protruding piece 25, and the reentrant 26 by notch is formed in base 13a of the semicircle pillar section 13 of the aforementioned stop section 14. metal backup — if a member 2 is attached in the insulating housing 4, the standup protruding piece 25 will counter through the engagement section 27 and the crevice 28 which are the wall of a reentrant 26 Consequently, the elastic deformation of the direction close to the side edge 15 of the card 8 of the piece 1 of a latch stops in the place where the standup protruding piece 25 engaged with the engagement section 27.

[0013]

When taking out the card 8 with which the insulating housing 4 was equipped, after operating the control unit 29 which is a point of the piece 1 of a latch, extending the piece 1 of a latch in an outside, i.e., the direction which separates from the side edge 15 of a card 8, solving the stop of a side edge 15 and the stop section 14 and rotating a card 8 in the direction opposite to **** 10, it is made to sample in the card edge type connector 3 constituted as mentioned above. in this case — although the piece 1 of a latch has broken [fear of breakage] when the piece 1 of a latch is incurvated too much exceeding an elasticity limit, since it is the thin member fabricated by insulating plastics — the curve of the piece 1 of a latch — metal backup — by the side attachment wall 17 of a member 2, since it can be made to stop by the position, i.e., the range of elastic deformation, breakage of the piece 1 of a latch can be prevented beforehand

[0014]

moreover, the piece 1 of a latch — plastics thin as mentioned above — since it is a member, there is a property which carries out curve deformation by contraction with time etc. in the direction of the inside, i.e., the direction close to the side edge 15 of a card 8 When this deformation progresses too much, the space inside the piece 1 of a latch which is the wearing space of a card 8 will be narrowed, wearing of a card 8 will be barred by the piece 1 of a latch, and smooth wearing will be blocked. the engagement section 27 prepared in base 13a of the appropriate semicircle pillar section 13 in which was resembled and the curve to the direction of the inside of the piece 1 of a latch constituted the stop section 14 from a card edge type connector 3 of an example, and metal backup — it prepared in the lower cover wall 19 of a member 2 — it can start, it can be made to be able to stop by engagement of a protruding piece 25, and too much curve of the piece 1 of a latch can be Therefore, always smooth wearing is able to make it the wearing disturbance of a card 8 by deformation of the direction of the inside of the piece 1 of a latch not arise, and to be able to be made to perform.

[0015]

[Effect of the Device]

Since the curve range of the piece of a latch can be restricted to the predetermined range by the metal backup member according to this design as explained above, it is effective in the ability to offer the card edge type connector of the stable performance.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the perspective diagram having shown the piece of a latch and metal backup member in an example of this design.

[Drawing 2] Similarly it is the plan of an example.

[Drawing 3] Similarly it is the side elevation of an example.

[Drawing 4] It is the plan having expanded and shown a part of example similarly.

[Drawing 5] It is the cross section of the direction of **** A of drawing 4 .

[Drawing 6] It is the bottom plan view of the direction of **** B of drawing 5 .

[Drawing 7] It is the bottom plan view expanding and showing drawing 5 .

[Drawing 8] metal backup of the example of this design — it is the plan of a member

[Drawing 9] Similarly it is front view.

[Drawing 10] Similarly it is a bottom plan view.

[Drawing 11] Similarly it is rear view.

[Drawing 12] Similarly it is a right lateral view.

[Description of Notations]

1 Piece of Latch

2 Metal Backup — Member

3 Card Edge Type Connector

4 Insulating Housing

4a This soma

4b Supporter

5a, 5b Terminal

6 Reentrant

7a, 7b Contact section

8 Card

9 Edge

12 Semicircle Frustum Type Section

12a The side of the semicircle frustum type section

12b The base of the semicircle frustum type section

13 Semicircle Pillar Section

13a The base of a semicircle pillar section

14 Stop Section

15 Side Edge of Card

16 Notch

17 Metal Backup — Side Attachment Wall of Member

18 Metal Backup — Up Cover Wall of Member

19 Metal Backup — Lower Cover Wall of Member

20 Protruding Piece

21 Nail

22 28 Crevice

23 Splenium

24 L Character-like Portion

25 Standup Protruding Piece

26 Reentrant

27 Engagement Section

29 Control Unit

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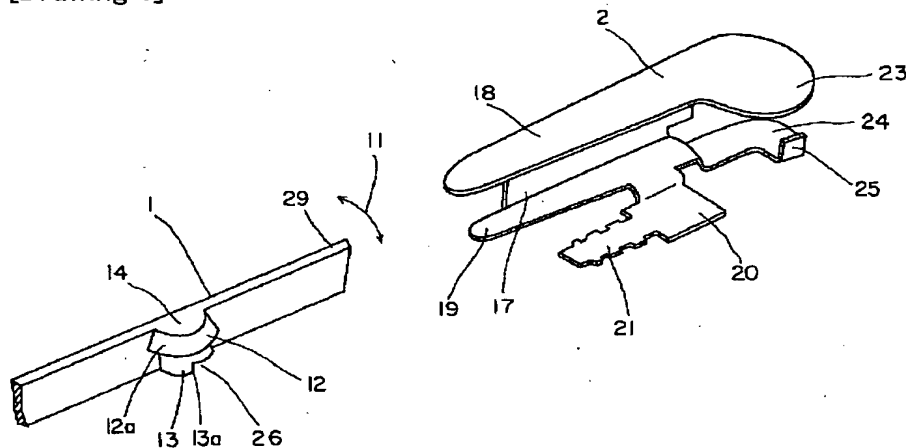
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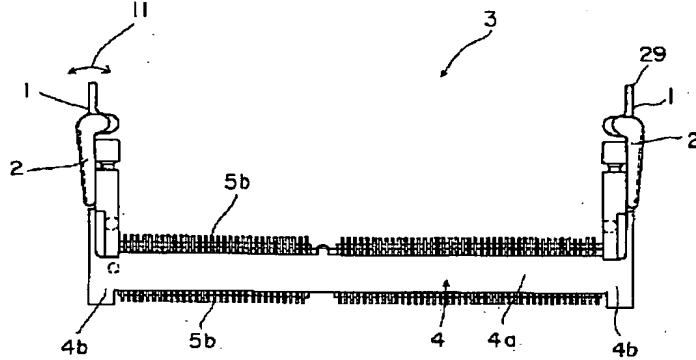
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DRAWINGS

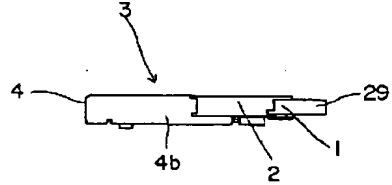
[Drawing 1]



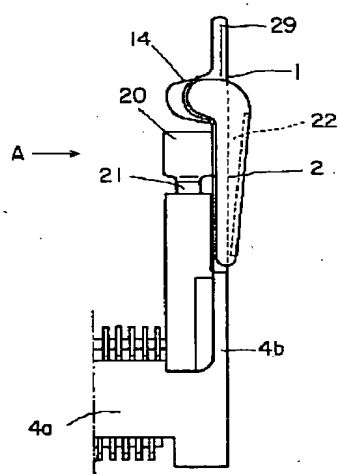
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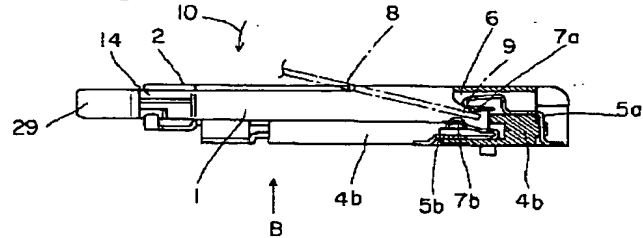
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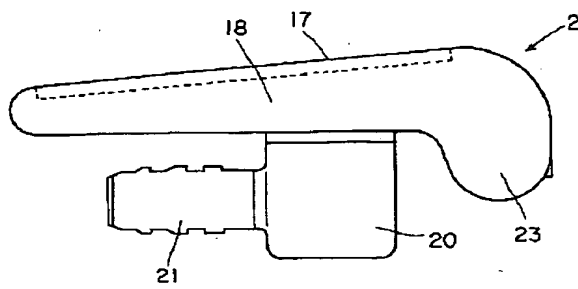
[Drawing 4]



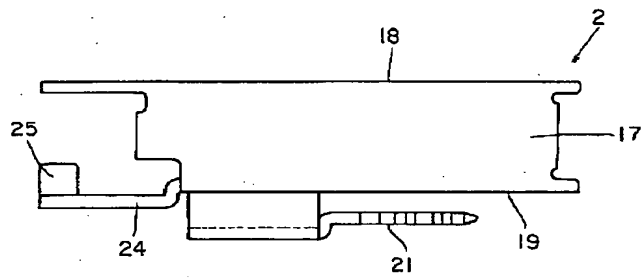
[Drawing 5]



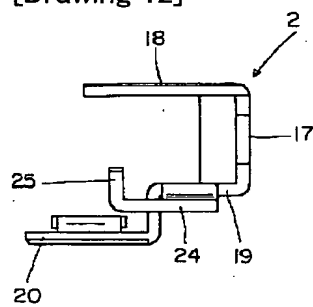
[Drawing 8]



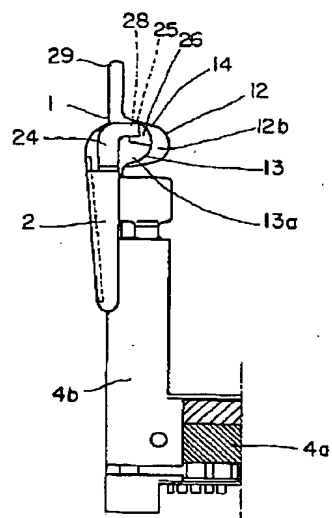
[Drawing 11]



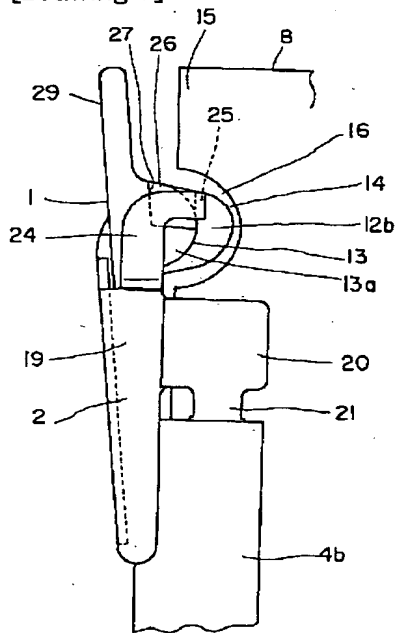
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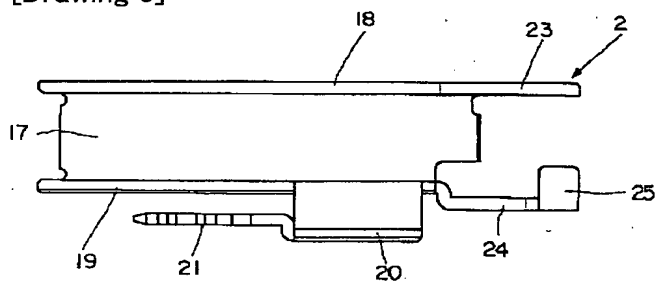
[Drawing 6]



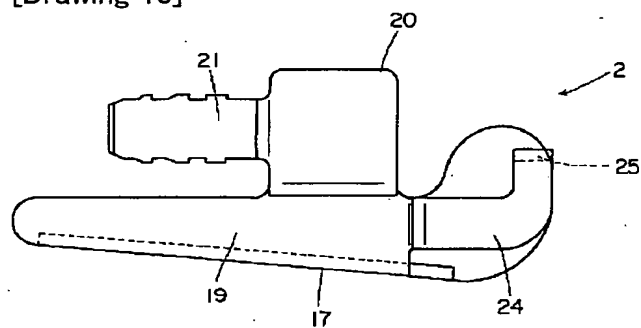
[Drawing 7]



[Drawing 9]



[Drawing 10]



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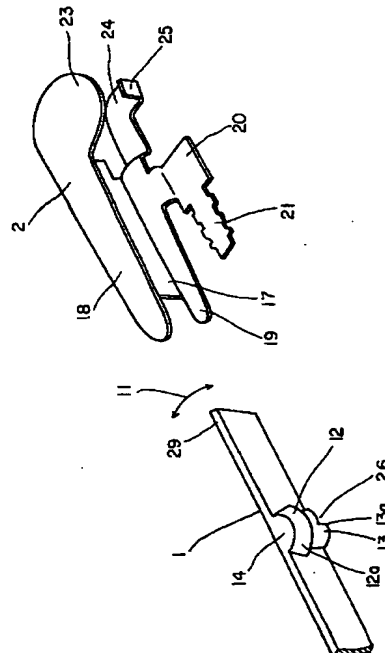
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(54) 【考案の名称】 カードエッジ型コネクタ

(57) 【要約】

【課題】 絶縁ハウジングと一体のラッチ片を設けたカードエッジ型コネクタであって、ラッチ片の変形を制限し、使用中の破損を防止すると共に、カードの装着が常時円滑にできるようにする。

【解決手段】 カードの側縁に対して離れる方向および近接する方向で弾性変形が可能とされたラッチ片1の外側に、側壁17と、側壁17から略直角に連続する上下の覆い壁18、19を備えた金属製バックアップ部材2が並設しており、側壁17の内面とラッチ片1の外側面を対向させてラッチ片1のカードの側縁から離れる方向の弾性変形を所定の位置で停止できるようにしてあり、かつ、金属製バックアップ部材2の下側の覆い壁19に立上り突片25が設けられ、ラッチ片1の下側に前記立上り突片25との係合部27が形成されて、ラッチ片1のカードの側縁に近接する方向の弾性変形を所定の位置で停止できるようにしてある。



【実用新案登録請求の範囲】

【請求項1】 プリント回路基板でなるカードと親基板を接続するために、親基板へ設置されるカードエッジ型コネクタであって、前記カード8の側縁15と係脱可能としたラッチ片1を備えているカードエッジ型コネクタ3において、

前記ラッチ片1が、多数のターミナル5a、5bが装着された絶縁ハウジング4の端部から絶縁ハウジング4と一体に延びる片持ち状部材で構成されて、カード8の側縁15に対して離れる方向および近接する方向で弾性変形が可能とされていると共に、このラッチ片1に対し、前記離れる方向と近接する方向の両方向で、ラッチ片1の弾性変形を所定の位置で停止させるための金属製バックアップ部材2が設けてあることを特徴とするカードエッジ型コネクタ。

【請求項2】 プリント回路基板でなるカードと親基板を接続するために、親基板へ設置されるカードエッジ型コネクタであって、前記カード8の側縁15と係脱可能としたラッチ片1を備えているカードエッジ型コネクタ3において、

前記ラッチ片1が、多数のターミナル5a、5bが装着された絶縁ハウジング4の端部から絶縁ハウジング4と一体に延びる片持ち状部材で構成されて、カード8の側縁15に対して離れる方向および近接する方向で弾性変形が可能とされていると共に、側壁17と、側壁17から略直角に連続する上下の覆い壁18、19を備えた金属製バックアップ部材2がラッチ片1の外側に並設しており、前記側壁17の内面とラッチ片1の外側面を対向させてラッチ片1のカード8の側縁15から離れる方向の弾性変形を所定の位置で停止できるようにしてあり、かつ、金属製バックアップ部材2の下側の覆い壁19に立上り突片25が設けられ、ラッチ片1の下側に前記立上り突片25との係合部27が形成されて、ラッチ片1のカード8の側縁15に近接する方向の弾性変形を所定の位置で停止できるようにしてあることを特徴とするカードエッジ型コネクタ。

【図面の簡単な説明】

【図1】 本考案の実施例におけるラッチ片と金属製バックアップ部材を示した斜視図である。

【図2】 同じく実施例の平面図である。

【図3】 同じく実施例の側面図である。

【図4】 同じく実施例の一部を拡大して示した平面

図である。

【図5】 図4の矢示Aの方向の断面図である。

【図6】 図5の矢示Bの方向の底面図である。

【図7】 図5を拡大して示す底面図である。

【図8】 本考案の実施例の金属製バックアップ部材の平面図である。

【図9】 同じく正面図である。

【図10】 同じく底面図である。

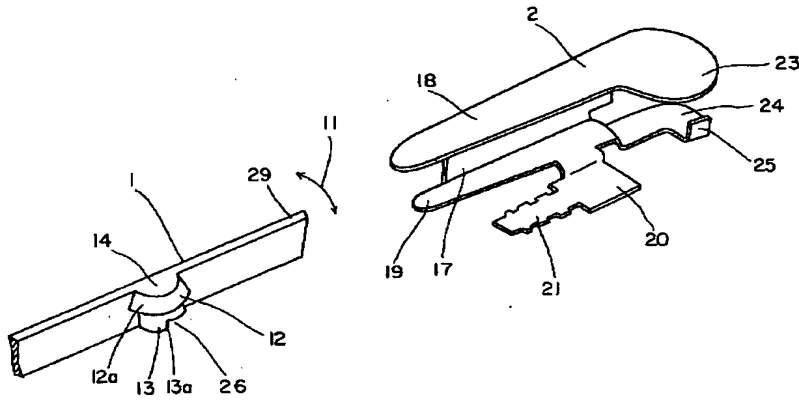
【図11】 同じく背面図である。

10 【図12】 同じく右側面図である。

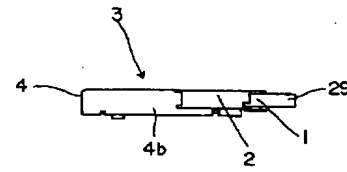
【符号の説明】

1	ラッチ片
2	金属製バックアップ部材
3	カードエッジ型コネクタ
4	絶縁ハウジング
4a	本体部
4b	支持部
5a、5b	ターミナル
6	凹入部
20 7a、7b	コンタクト部
8	カード
9	エッジ
12	半円錐台形部
12a	半円錐台形部の側面
12b	半円錐台形部の底面
13	半円柱部
13a	半円柱部の底面
14	係止部
15	カードの側縁
30 16	切欠部
17	金属製バックアップ部材の側壁
18	金属製バックアップ部材の上部覆い壁
19	金属製バックアップ部材の下部覆い壁
20	突片
21	ネイル
22、28	隙間
23	膨大部
24	L字状部分
25	立上り突片
40 26	凹入部
27	係合部
29	操作部

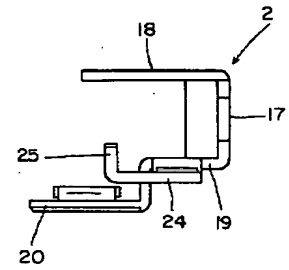
【図1】



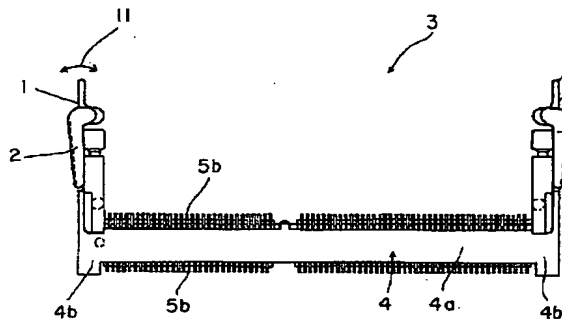
【図3】



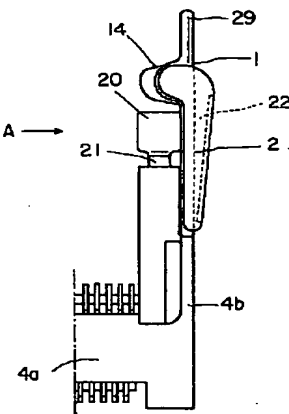
【図12】



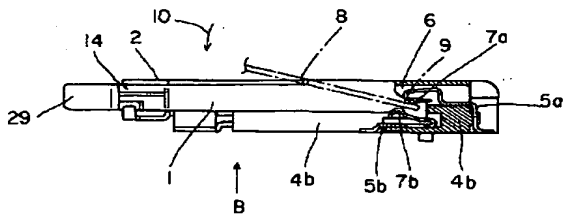
【図2】



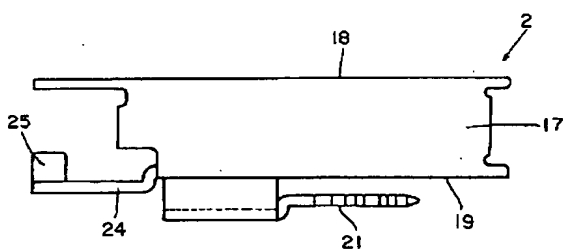
【図4】



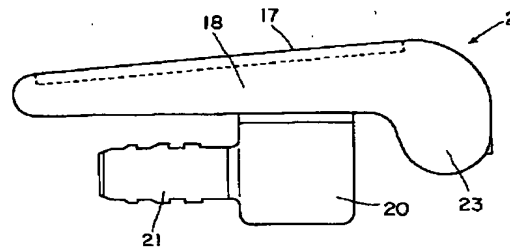
【図5】



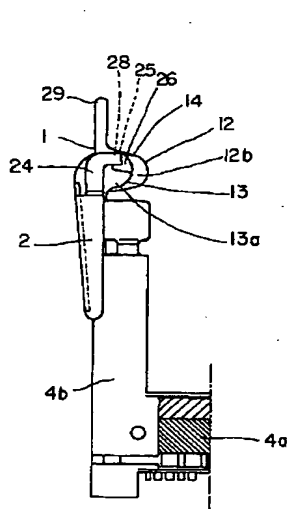
【図11】



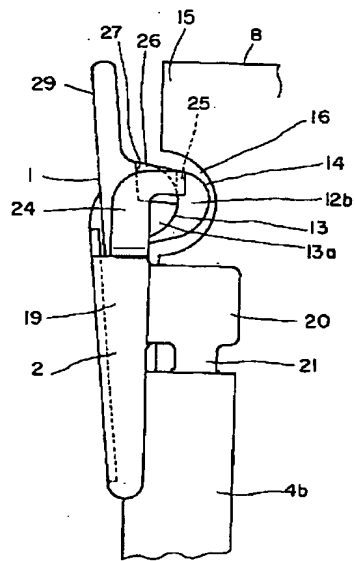
【図8】



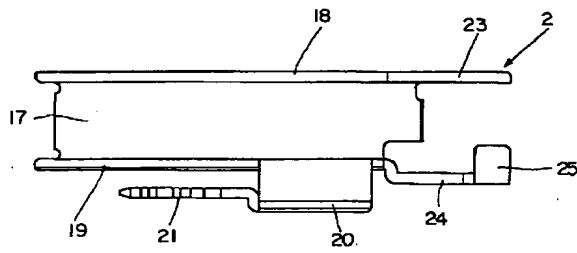
【図6】



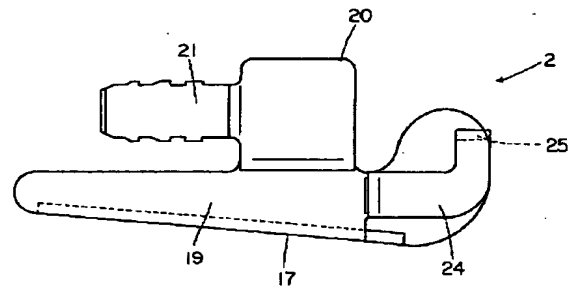
【図7】



【図9】



【図10】



【考案の詳細な説明】

【0001】

【産業上の利用分野】

本考案は、プリント回路基板でなるカード（子基板）と親基板を接続するために、親基板へ設置されるカードエッジ型コネクタに関する。

【0002】

【従来の技術】

従来、この種のカードエッジ型コネクタは、カードのエッジを受け入れる凹入部が形成された絶縁ハウジングに、多数のターミナルを装着して構成され、前記凹入部に並列された各ターミナルのコンタクト部と、凹入部に受け入れられたカードのエッジに形成された接合パッドとが1対1の関係で係合するようにしている。そして、前記凹入部にエッジが受け入れられたカードが意に反して抜け出さないようにするために、前記絶縁ハウジングにはラッチ片が設けられて、カードの側縁と係脱できるようにしている（例えば、実開平8-22865号、実開平8-55651号公報等参照）。このラッチ片は、金属製として絶縁ハウジングに後から取り付けられたものと、絶縁ハウジングと同じ材質で一体に形成されたものがある。

【0003】

【考案が解決しようとする課題】

ラッチ片を絶縁ハウジングと同じ材質で一体に形成した構成のカードエッジ型コネクタは、金属製のラッチ片を有するものに比べて、親基板上での占有面積を小さくでき、また、コネクタ自体の組み立て工数も少なくできるなどの利点があるものであったが、ラッチ片が絶縁ハウジングと同じプラスチック製であるので、過度の湾曲に対して弱く、また、材料の収縮による変形でカードを装着する部分が狭くなってカードの装着が妨げられる事態が生ずるなどの問題点があった。

【0004】

本考案は斯かる問題点に鑑みてなされたもので、絶縁ハウジングと同じ材質で一体のラッチ片を設けたカードエッジ型コネクタであって、ラッチ片の変形を制限し、使用中の破損を防止すると共に、カードの装着が常時円滑にできるように

した構造のカードエッジ型コネクタを提供することを目的としたものである。

【0005】

【課題を解決するための手段】

前記の目的を達成する本考案は、プリント回路基板でなるカードと親基板を接続するために、親基板へ設置されるカードエッジ型コネクタであって、前記カードの側縁と係脱可能としたラッチ片を備えているカードエッジ型コネクタにおいて、前記ラッチ片が、多数のターミナルが装着された絶縁ハウジングの端部から絶縁ハウジングと一体に延びる片持ち状部材で構成されて、カードの側縁に対して離れる方向および近接する方向で弾性変形が可能とされていると共に、このラッチ片に対し、前記離れる方向と近接する方向の両方向で、ラッチ片の弾性変形を所定の位置で停止させるための金属製バックアップ部材が設けてあることを特徴とするカードエッジ型コネクタである。

【0006】

また、プリント回路基板でなるカードと親基板を接続するために、親基板へ設置されるカードエッジ型コネクタであって、前記カードの側縁と係脱可能としたラッチ片を備えているカードエッジ型コネクタにおいて、前記ラッチ片が、多数のターミナルが装着された絶縁ハウジングの端部から絶縁ハウジングと一体に延びる片持ち状部材で構成されて、カードの側縁に対して離れる方向および近接する方向で弾性変形が可能とされていると共に、側壁と、側壁から略直角に連続する上下の覆い壁を備えた金属製バックアップ部材がラッチ片の外側に並設してあり、前記側壁の内面とラッチ片の外側面を対向させてラッチ片のカードの側縁から離れる方向の弾性変形を所定の位置で停止できるようにしてあり、かつ、金属製バックアップ部材の下側の覆い壁に立上り突片が設けられ、ラッチ片の下側に前記立上り突片との係合部が形成されて、ラッチ片のカードの側縁に近接する方向の弾性変形を所定の位置で停止できるようにしてあることを特徴とするカードエッジ型コネクタである。

【0007】

【作用】

本考案のカードエッジ型コネクタによれば、ラッチ片は、その弾性変形が金属

製バックアップ部材で所定の範囲に制限されるので、使用中の過度の湾曲による破損を防止することができる。また、絶縁ハウジングを構成したプラスチック材料の収縮等による塑性変形も金属製バックアップ部材で所定の範囲に制限できるので、カードの装着が妨げられるような事態も避けることができる。

【0008】

【実施例】

以下、本考案の実施例を添付の図を参照して説明する。

【0009】

図1において、1がラッチ片、2が金属製バックアップ部材である。ラッチ片1は、図2乃至図4に示した実施例のカードエッジ型コネクタ3の一部であり、このラッチ片1の外側に金属製バックアップ部材2が並設されているものである。カードエッジ型コネクタ3は、絶縁性プラスチックを成形した絶縁ハウジング4と、この絶縁ハウジング4に装着した複数のターミナル5a、5bで構成されている。絶縁ハウジング4は、中央の本体部4aの両端に支持部4bを略直角に設けた形状で、前記ラッチ片1は各支持部4bと一体で、支持部4bの長手方向に沿って片持ち状に延びている。本体部4aの、支持部4bおよびラッチ片1が延びる側には本体部4aの長手方向に沿って凹入部6が形成されてカードのエッジを受け入れるようにしてあり、前記複数のターミナル5a、5bの各コンタクト部7a、7bが、凹入部6に受け入れられるカードのエッジの両面の接合パッドと係合できるように、2列に、それぞれ一定のピッチで配されている（図6参照）。図5において鎖線で示した8はカードであって、このカード8は図示のように斜めにしてエッジ9を凹入部6のコンタクト部7a、7b間に挿入した後、矢示10の方向に回動させてカード8を支持部4bと平行にして装着されるものである。

【0010】

片持ち状部材でなる前記ラッチ片1は、図に示したように薄い板状で矢示11の方向、即ち、カード8の側縁に対して離れる方向および近接する方向で弾性変形による湾曲が可能としてある。ラッチ片1の中間部内側に上部を半円錐台形部12とし、下部を半円柱部13とした係止部14が形成されている。カード8が

前記のように装着される際に、カード8の側縁がラッチ片1の内側と対向する。そこで、図7に示したようにカード8の側縁15には、係止部14に対応させた半円状の切欠部16が形成される。カード8を図5に鎖線で示した斜めの状態から、支持部4bと平行となる位置へ矢示10の方向に回動させる際に、切欠部16の内縁と前記半円錐台形部12のスカート状の外面12aが対向し、カード8の回動に従って、外面12aのカム作用でラッチ片1がカード8の側縁15から離れる方向に湾曲した後、カード8の側縁15が半円錐台形部12を通過したところでラッチ片1が弾性により元に復帰し、半円柱部13が切欠部16に嵌ると共に、半円錐台形部12の底面12bがカード8の側縁15に係止して、カード8の矢示10と反対の方向の回動と支持部4bの長手方向での移動が阻止できるようにされている。半円柱部13の高さはカード8の厚さと略等しくしてある。

【0011】

前記のようなラッチ片1に対して並設された金属製バックアップ部材2は、図8乃至図12に詳細に示してある形状に、金属板を打ち抜き成形したもので、側壁17と、この側壁17の上側縁に略直角に連続する上部覆い壁18と、側壁17の下側縁に略直角に連続する下部覆い壁19とを備えている。そして、下部覆い壁19の内側縁に突出させた突片20にネイル21を設け、このネイル21を前記支持部4bの端面から支持部4b内に挿入係止して、ラッチ片1に沿わせた金属製バックアップ部材2を絶縁ハウジング4に取り付け固定できるようになっている。側壁17の長手方向とネイル21の長手方向は、平行ではなく、やや角度をなしている。絶縁ハウジング4に取り付けた金属製バックアップ部材2は、その側壁17の内面と前記ラッチ片1の外側面が隙間22を介して対向すると共に、上部覆い壁18がラッチ片1の上側に沿い、また、下部覆い壁19がラッチ片1の下側に沿うようになっている。この結果、ラッチ片1の外側方向、即ち、カード8の側縁15から離れる方向の弾性変形は、ラッチ片1の外側面が側壁17の内面に当接したところで停止するようになっている。上部覆い壁18の先端一側は、ラッチ片1の係止部14に対応させた膨大部23とされて、半円錐台形部12の上面を覆うようにしてある。一方、下部覆い壁19の先端は、係止部14の半円柱部13の底面13aと対向するL字状部分24とされ、その先端に立上

り突片25が設けてある。

【0012】

前記立上り突片25は、ラッチ片1の内側方向、即ち、カード8の側縁15に近接する方向の弾性変形を制限するためのもので、この立上り突片25に対応させて、前記係止部14の半円柱部13の底面13aには切欠による凹入部26が形成されている。金属製バックアップ部材2を絶縁ハウジング4に取り付けると、立上り突片25が凹入部26の内壁である係合部27と隙間28を介して対向するようになっている。この結果、ラッチ片1のカード8の側縁15に近接する方向の弾性変形は、立上り突片25が係合部27に係合したところで停止するようになっている。

【0013】

前記のように構成されたカードエッジ型コネクタ3において、絶縁ハウジング4に装着されたカード8を取り出す場合は、ラッチ片1の先端部である操作部29を操作し、ラッチ片1を外側、即ち、カード8の側縁15から離れる方向へ広げて、側縁15と係止部14の係止を解き、カード8を矢示10と反対の方向へ回動させた後、抜き取るようにする。この場合に、ラッチ片1は絶縁性プラスチックで成形された薄い部材であるため、弾性限界を超えて過度に湾曲させるとラッチ片1が折れるなど、破損のおそれがあるが、ラッチ片1の湾曲は金属製バックアップ部材2の側壁17によって、所定の位置、即ち、弾性変形の範囲で停止させることができるので、ラッチ片1の破損を未然に防止することができる。

【0014】

また、ラッチ片1は、前記のように薄いプラスチック部材であるため、経時的な収縮などによって、内側方向、即ち、カード8の側縁15に近接する方向に湾曲変形する性質がある。この変形が過度に進むと、カード8の装着空間であるラッチ片1の内側の空間が狭められて、カード8の装着がラッチ片1によって妨げられ、円滑な装着が妨害されることとなる。然るに、実施例のカードエッジ型コネクタ3では、ラッチ片1の内側方向への湾曲は、係止部14を構成した半円柱部13の底面13aに設けた係合部27と、金属製バックアップ部材2の下部覆い壁19に設けた立上り突片25の係合で停止させて、ラッチ片1の過度の湾曲

を制限することができる。従って、ラッチ片1の内側方向の変形による、カード8の装着妨害が生じないようにし、常に円滑な装着ができるようにすることが可能である。

【0015】

【考案の効果】

以上に説明したように、本考案によれば、金属製バックアップ部材でラッチ片の湾曲範囲を所定の範囲に制限できるので、安定した性能のカードエッジ型コネクタを提供できる効果がある。